BOOK REVIEW

Oostendorp, Cora. The Bryophytes of the Palaeozoic and the Mesozoic. 1987. Bryophytorum Bibliotheca, Band 34. 112 pp., 49 pls. J. Cramer, Stuttgart. ISBN 3-443-62006-X. Retail price: 120 DM.

This comprehensive catalog of Paleozoic and Mesozoic fossil bryophytes collates all published literature up to 1980. Many of the original illustrations are reproduced photographically in the plates at the end of the book. Only gametophytic material or sporophytes attached to gametophores, described or annotated recently as bryophytic, have been included. A few incertae sedis, questionable bryophyte-like fossils, are also included. Russian and Polish but not the original Latin or French diagnoses have been translated into English. For each form species (not assigned to an extant family) in the alphabetized list, Oostendorp lists the nomenclatural authority and a reference to the illustrations reproduced in the back of the book. This is followed by a list of synonyms with publication references according to the *International List of Periodical World Abbreviations* (1968). Each form species is then treated further under four subheadings: (1) **Icones**, a list of publications with original or reproduced figures; (2) **Type**, including the location of the collection in which the holotype is deposited and the field locality, stratigraphical position, and age of the type collection; (3) **Diagnosis**, sometimes presented as **Original Diagnosis** and an additional **Description**, or **Diagnosis** and **Diagnosis emended**, with reference to the original publication; and (4) **Systematic Position**, to order if known. Form genera are treated similarly to form species with the subheadings **Type-species**, **Diagnosis**, and **Systematic position**.

After a brief section on problematic bryophyte-like fossils, treated similarly to the form species, there follows an exhaustive reference list and index, the latter differentiating among accepted names (130), synonyms, and new combinations (four new combinations made by C. Oostendorp).

Preceding the lists described above are brief introductory chapters on "History and Classification" and on "The Fossil Record." The first chapter discusses the development of Paleozoic and Mesozoic paleobryology and defines the structural characteristics of the form genera. It also classifies form genera with well-preserved remains within the present classification of bryophytic orders, following the *International Code of Botanical Nomenclature*. Only one order, the Protosphagnales, does not have any extant members. Table 3 lists chronologically all described species with their synonymy of the form genera *Thallitis*, *Hepaticites*, *Jungermannitis*, *Metzgeriites*, *Marchantites*, and *Muscites*.

The chapter summarizing the fossil record reviews chronologically the major form species for each geological period from the Devonian to Cretaceous. In addition, it lists all well-preserved form genera and species of each period for each order in a systematic review. This is the only part of the book where an attempt is made to evaluate some records in the light of bryophyte phylogeny and classification. Conclusions derived from this analysis are brief and general, without any deviation from commonly accepted concepts suggested in earlier review papers.

In my own database I have been unable to find additional records published before 1980 that were not collated in this book. The number of typographical errors is very small. The larger tables are not well differentiated from the main text, and headings are frequently separated by page breaks from the following text. The gray-toned photographic reproductions of the figures are a major improvement over the photocopies of the less accessible publications I have often had to study. The selection of figures reproduced for the plates is sufficient and representative. With such a large amount of disparate material to catalog and analyze, C. Oostendorp was not able to evaluate critically every record. However, this book will be invaluable as a starting point for the study of the relationship between fossil bryophytes and phylogenetic research on living mosses and liverworts.—Jan A. Janssens, *Department of Ecology, Evolution, and Behavior, 318 Church Street, University of Minnesota, Minneapolis, Minnesota 55455, U.S.A.*